

## **REMARKS**

This responds to the Office Action mailed on December 10, 2004.

No claims are amended; no claims are canceled; claims 31-33 are added; as a result, claims 1-33 are now pending in this application.

### **§112 Rejection of the Claims**

Claims 1-30 were rejected under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement.

The Applicant respectfully traverses this rejection for the following reasons. The Office Action indicates that “reduced alphabet” and “reduced alphabet MLSE equalizer” and “reduced complexity equalizer” are not enabled by the Applicant’s specification.

A reduced complexity equalizer as indicated by item 12 at page 3, lines 1 and following of the specification may be a complex or “full symbol equalizer which identifies a subset of symbols from the full symbol alphabet that have a higher probability of being an actual transmitted symbol than the other symbols in the full alphabet”. See also page 5, lines 17-19 of the specification. The Applicant believes that such a reduced complexity equalizer is well within the knowledge of one of ordinary skill in the art since maximum likelihood symbol sequence estimation is well known due to Viterbi algorithm, as mentioned at page 1, lines 17-19 of the specification. The starting point can be a well known full symbol equalizer.

A reduced alphabet MLSE equalizer as indicated by item 16 at page 4, lines 10-25 of the specification “is a full-state MLSE equalizer … instead of testing the communication signal for all possible symbols in the full alphabet … only checks the symbols in the reduced alphabet … thus reducing the overall complexity of the MLSE” (full or complex). The Applicant again believes that such is well within the skill of one of ordinary skill in the art, since MLSE (maximum likelihood sequence estimation) detectors are well known as previously shown; and, if the MLSE is given fewer symbols, it can work similarly to the case where it is given a full alphabet. See page 4, lines 12—14 of the specification.

The reduced alphabet is the product produced by the reduced alphabet determination indicated by item 14 at page 4, lines 3-6 and lines 10-11 of the specification. The reduced alphabet determination 14 selects the reduced alphabet from a subset of symbols from the full

symbol alphabet that have a higher probability of being actual transmitted symbols than other symbols in the full alphabet based on the incoming communication signal. See page 2, line 28 through page 3, line 3 of the specification. Maximum likelihood sequence estimation is well known as previously shown. Further, as indicated at page 5, lines 20-26 of the specification the most probable symbols, K, where K is a positive integer, are output as the reduced alphabet to the MLSE. The Applicant submits that it is well how to perform maximum likelihood sequence estimations given an input signal and a subset of symbols most likely to be transmitted using Viterbi. As a result, the Applicant believes that the reduced alphabet does not require undue experimentation to make and further that the method is described the Applicant's specification.

Further the reduced state MLSE equalizer is described in sufficient detail at page 5 lines 12-26. The Applicant believes that since maximum likelihood sequence detection, such as Viterbi, is well known in the art and is enabled by the specification. The reduced state MLSE equalizer may be a full state MLSE equalizer which is used with a reduced alphabet.

As a result of the above explanation, the Applicant believes that the 35 USC 112, first paragraph rejection has been overcome. The Applicant respectfully requests removal of this rejection.

Applicant respectfully traverses the 35 USC 112, first paragraph rejection. As described in MPEP § 2164 et seq., the following represents the *prima facie* case that the Examiner must provide, *inter alia*, in order to maintain a rejection of non-enablement with respect to the disclosure of a patent application under 35 U.S.C. § 112, first paragraph:

1. a rational basis as to why to doubt the objective truth of the statements in the disclosure that purport to teach;
2. the manner and process of making and using the invention; and
3. without undue experimentation.

The Applicant believes that the specification teaches each of the above-mentioned item with sufficient specificity to enable one of ordinary skill in the art to make the invention. Further, the specification teaches how to make blocks 12, 14 and 16 from well know devices. Further, the Applicant believes that no undue experimentation is required as mentioned above.

Since the Examiner has not provided evidence supporting these elements necessary to sustain a rejection, the Examiner, it is believed, has not made out a *prima facie* case for non-enablement under 35 U.S.C. § 112, first paragraph. It is respectfully requested that this rejection be withdrawn.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Frank Bogacz, at 480-361-7740, or Applicant's below-named representative to facilitate the prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

EYAL KRUPKA

By his Representatives,

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Date Feb. 8, 2005

By Ann M. McCrackin  
Ann M. McCrackin  
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 9<sup>th</sup> day of February 2005.

Name

Chris Hammond

Signature

Chris Hammond